**CITY OF LINCOLN, NEBRASKA STANDARD SPECIFICATIONS**

**Chapter 9**

**CHAIN LINK FENCING AND PIPE RAIL FENCING**

# CHAPTER 9

# CHAIN LINK FENCING AND PIPE RAIL FENCING

## 9.00 GENERAL

The work of in this Chapter shall include the installation of chain link fencing and pipe rail fencing.

## 9.01 RELATED ITEMS SPECIFIED ELSEWHERE

Chapter 8 Retaining Wall and Steps
Chapter 21 Storm Sewers

## 9.02 MATERIALS

A. CHAIN LINK FENCE

Materials for chain link fencing shall be standard commercial products which meet the general requirements of these Specifications.

Chain link fence fabric shall be No. 9 gauge wire woven in a 2 inch mesh. Fabric shall be the height indicated on the plans with both edges selvaged, twisted and barbed and shall be zinc-coated by the hot-dip process after fabrication.

End, corner, pull posts and intermediate posts shall be round tubular steel having a nominal outside diameter of 2 3/8 inches and weight of 3.52 pounds per foot.

Top rail shall be round having a nominal outside diameter of 1 ½ inches) and weight of 1.77 pounds per foot.

Post braces shall be round tubular steel having a nominal outside diameter of 1 ½ inches and weight of 1.77 pounds per foot.

Reinforcing wire shall be No. 7 gauge coiled spring wire.

Stretcher bars shall not be less than 3/16" x 3/4" x the length required for the height of the fabric supplied, but in no case less than 6 inches shorter than the height of the specified fabric.

Post tops shall be ornamental.

Zinc coating shall be applied to all steel and iron parts after fabrication.

Pipe sleeves shall be round, galvanized steel, have a nominal inside diameter of 2 ½ inches and a minimum length of 12 inches.

**9.02 MATERIALS** (Continued)

B. PIPE RAIL FENCE

Materials for pipe railing fencing shall be standard commercial products which meet the general requirements of the specifications.

All pipe used for railing shall be round tubular steel (Schedule 40) galvanized pipe having nominal outside diameter of 1 3/8 inches.

All end, corner and intermediate posts shall be round tubular steel (Schedule 40) galvanized pipe having a nominal outside diameter of 1 3/8 inches.

The tee, cross elbow and flange connectors shall be malleable iron connectors as approved by the Engineer. The connectors are not to be welded or threaded type, but shall be of the reusable type having case hardened set screws to provide connection.

Pipe sleeves shall be round, galvanized steel, have a nominal inside diameter of 1 ½ inches and a minimum length of 12 inches.

Zinc coating shall be applied to all steel and iron parts after fabrication.

C. RIGID CELLULAR PLASTIC BACKFILL

Rigid cellular plastic backfill shall be manufactured for the intended purposes and conform to the test requirements of "Standard Test Method for Compressive Properties of Rigid Cellular Plastic" ASTM Designations D 1621, and "Standard Test Method for Tensile and Tensile Adhesion Properties of Rigid Cellular Plastics" D 1623.

D. POLYURETHANE SEALANT

Polyurethane sealant shall be one-part, self leveling, conforming to the requirements of "Standard Specifications for Elastomeric Joint Sealants" ASTM Designation C 920, Type S, Grade P, Class 25.

**9.03 FENCE INSTALLATION**

A. CHAIN LINK FENCE

New chain link fencing shall be installed at the locations shown and as dimensioned and detailed on the plans.

Post spacing for posts not to be on concrete walls shall not exceed 10 feet and shall be set in 3 feet of concrete base 12 inches in diameter. Exposed surface of concrete shall be crowned to shed water.

Post spacing for posts to be set on concrete wall shall not exceed 10 feet or shall be at intervals shown on the plans. Posts shall be set into pipe sleeves cast into the wall and shall extend a minimum of 12 inches into the sleeve.

**9.03 FENCE INSTALLATION** (Continued)

A. CHAIN LINK FENCE (Continued)

Posts in wall shall be set using rigid cellular plastic foam backfill. Sufficient material shall be placed in the pipe sleeve to completely fill the annular space to within 3/16 inch below the top of the sleeve. Care shall be taken to insure that the annular space is filled in such a manner as to prevent voids in the plastic foam. Excess material shall be cut off and removed so as to leave a 3/16 inch reservoir. The resulting reservoir shall be filled with one-part, self-leveling polyurethane sealant installed in accordance with the manufacturer's recommendations.

End, corner, and pull posts shall be braced to nearest point with tubular steel post brace with a 3/8 inch galvanized steel truss rod with a turnbuckle for adjustment.

Fastening to all terminal posts shall be with stretcher bars and fabric bands at 16 inch intervals. Fastening to line posts shall be tie wire or other approved method at 16 inch intervals.

Fastening to top rail shall be with wire ties at intervals not exceeding 20 inches. Fastening to bottom tension wire shall be with wire ties at intervals not exceeding 2 feet.

BASIS OF PAYMENT

Chain link fences installed in accordance with the plans and these Specifications and accepted by the Engineer shall be measured and paid for at the contract unit price bid per foot for _____ ____" CHAIN LINK FENCE, IN PLACE, for the various sizes called for in the proposal.

B. PIPE RAILING FENCE

New pipe rail fencing shall be installed at the locations shown and as dimensioned and detailed on the plans. All work shall be performed by competent and experienced fence erection workers, whose experience record is satisfactory to the Engineer.

Post spacing shall not exceed 10 feet or shall be at intervals shown on the plans. Posts installed in concrete walls shall be set into pipe sleeves cast into the wall and shall extend a minimum of 12 inches into the sleeve.

Posts in walls shall be set using rigid cellular plastic foam backfill. Sufficient materials shall be placed in the pipe sleeve to completely fill the annular space to within 3/16 inch below the top of the sleeve. Care shall be taken to insure that the annular space is filled in such a manner as to prevent voids in the plastic foam. Excess material shall be cut off and removed so as to leave a 3/16 inch reservoir. The resulting reservoir shall be filled with one-part, self-leveling polyurethane sealant installed in accordance with the manufacture's recommendations.

The tee, cross, elbow and flange connectors shall be set such that the set screw side of the connectors shall be installed on the side opposite the pedestrian traffic.

BASIS OF PAYMENT

Pipe rail fence, installed in accordance with the plans and these specifications and accepted by the Engineer, shall be measured and paid for at the contract unit price bid per linear foot for ___ _____" PIPE RAIL FENCE, IN PLACE. Such payment shall be full compensation for all castings, pipe, sleeves, plastic backfill, caulking, posts, rails, and connectors, materials, equipment, tools, labor and incidentals necessary to complete the work as indicated on the plans.